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EXTENSION OF DEFORESTATION IN ETHIOPIA: A REVIEW

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ABSTRACT

One of the foremost trials opposite Ethiopia in striving for development is environmental degradation, manifested in the degradation of land and water assets as well as loss of biodiversity. Land degradation is conveyed in periods of dirt erosion and decrease of soil fertility. Deforestation/devegetation is one of the major factors assisting to land degradation by exposing the dirt to diverse agencies of erosion. Therefore the study makes a serious effort to reconsider into the deforestation in Ethiopia. The purposes of the study include the quantum of deforestation rate and the recommendations of apt principle assess to reduce deforestation. The detail that some social and economic development endeavors may inflict ecological damage that could make the endeavors counterproductive and also underscores the fact that the protection of the plantation, in specific, as well as the safeguarding of human wellbeing and wellbeing, and the maintaining of the biota and the aesthetic worth of nature is the obligation and blame of all.

INTRODUCTION

One of the major trials opposite Ethiopia in striving for development is ecological degradation, manifested in the degradation of land and water resources as well as decrease of biodiversity. Land degradation is conveyed in periods of dirt erosion and decrease of soil fertility. Deforestation/devegetation is one of the major components contributing to land degradation by revealing the soil to various agencies of erosion. With high-intensity rainstorms and comprehensive steep slopes, Ethiopia is highly susceptible to dirt erosion, particularly in the highlands (Teketay, Demel 2001). Soil tendencies approximated that in 2000 Ethiopia had 43,440,000 km² of natural forest locality, which is 4% of its total land area. Contrasted to other East African nations Ethiopia's deforestation rate is about the mean. However, the deforestation rates

in East Africa are second largest of the continent. Moreover, it has the least significant part of its plantation locality designated mainly for conservation. Apart from to the north, Africa, East African nations display the second largest down turn rates of conservation timber plantations in the countries. In a plantation resource assessment of Ethiopia, Reusing discovered that in 17 years (1973-1990) high-forest cover decreased from 54,410 to 45,055 km² or from 4.75 to 3.93% of the land locality. He calculated a deforestation rate of 1,630 km² per year, which means that deforestation at the same rate would depart about 18,975 of the 45,055 km² in 2006. The FAO (2007) approximated a deforestation rate of 1,410 km² per year. Overgrazing, deforestation, and poor farming practices have assisted to dirt erosion so critical, particularly in the Tigray and Eritrea districts, that considerable areas of farmland have been lost to cultivation. As of 1994, 600,000 acres of arable land were cleaned away each year. The combined consequences of critical drought and a 17-year civil war have also supplemented to Ethiopia's ecological difficulties. Ethiopia's forests are furthermore threatened. Each year, the territory loses 340 square miles of plantation land. Its plantations and woodland decreased by 3.4% between 1983 and 1993. Timber plantations and woodlands are used for diverse reasons in Ethiopia.

About 96% of fuel consumption in Ethiopia arrives from biomass fuels, mainly from woody biomass. Wood is furthermore used as pole and industrial timber whose demand is increasing with increased community. Land degradation in turn greatly sways farming productivity and output. In 1990 solely, for instance, decreased dirt deepness caused by erosion produced in a grain production loss of 57,000 (at 3.5 mm dirt decrease) to 128,000 tons (at 8 mm dirt depth). It has been estimated that the grain output lost due to land degradation in 1990 would have been adequate to feed more than four million people. The availability of land suitable for agriculture is shrinking, while at the same time the amount of land required to feed the growing community is gradually increasing (Teketay, Demel 2001).

REVIEW OF LITERATURE

Many studies show that the rainforests of Southwestern Ethiopia are the world's birthplace of *Coffea arabica* and harbor their last wild populations. The variability in their tolerance towards diseases (Hindorf, H. 2006) and drought (Beining, A. 2007) reflects the high genetic diversity of the wild coffee populations. Their value has been estimated between 0.42 and 1.458 billion US$ a year (Hein, L. and Gatzweiler, F. 2006). Worldwide about 5 billion kg of coffee per year are consumed in the importing countries. Coffee houses have become popular and the specialty coffee market is booming (Benoit, D. and S. Ponte 2005).

Despite the slightly different estimates for deforestation in different regions of Ethiopia, given deforestation rates remain the same, the country will have lost its last tree of high forests within about 27 years. And with it will go the world's only original wild populations of *Coffea arabica*. The economic loss of that genetic resource ranges between 0.4 and 1.5 billion USD/ year.

ETFF (2013) reported that at present, though there are some efforts in planting trees by communities or organizations, there is, in general, a lack of tendency to plan, mobilize and implement sustainable afforestation programmes across the nation despite rising problems of environmental

deterioration and frequent drought and famine that is severely affecting local communities in particular and the national economy in general. Currently, there is insufficient attention given, both by the government and the public, regarding long-term implications of a deteriorating natural resource base.

DEFORESTATION IN ETHIOPIA

Ethiopia loses about 141,000 hectares of natural forest each year due to firewood collection, conversion to farmland, overgrazing, and use of forest wood for building material. Ethiopia faces a difficult future, because the agricultural sector, which forms the backbone of the economy, is totally dependent on forest resources.

Between 1990 and 2005, Ethiopia lost 14 percent of its forest cover or 2.1 million hectares. Deforestation rates have increased by 10.4 percent since the close of the 1990s.

On paper, 16.4 percent of Ethiopia is under some form of protection. The country has some 6,603 species of plants, 839 birds, 205 mammals, 288 reptiles, and 76 amphibians.

Table 1. Extent of Ethiopia's high forests by region

Region	Total (ha)	% of total
Oromia	2,547,632	62.5
SNNP	775,393	19.0
Gambella	535,948	13.2
Amhara	92,744	2.3
Tigray	9,332	0.2
Benishangul-gumuz	68,495	1.7
Afar	39,197	1.0
Somali	4,257	0.1
Others (Harari, Dire dawa)	216	0.0
Total	4,073,214	100

Source: WBISPP (2004b)

Table 1 pointed out that out of a total of 4,073,214 hectares of high forest in Ethiopia, about 95% is found only in three regions, namely, Oromia, SNNP and Gambella and that most of these are in Oromia region (about 63% of the total).

Estimates of the extent of woodlands and shrublands in Ethiopia by region presented in Table 2 indicate that the total area of woodlands and shrublands in Ethiopia is 29.24 million hectares and 26.40 million hectares respectively.

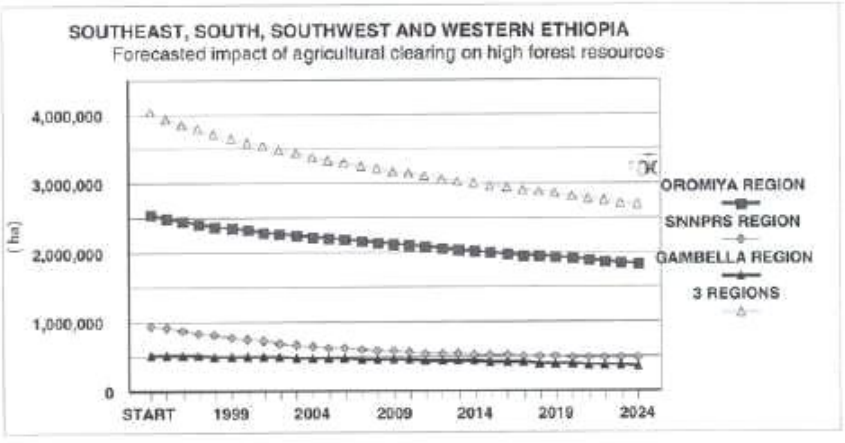
Table 2. Extend of Ethiopia's woodland and shrubland by region

S.No.	Region	Woodland		Shurbland	
		Total (ha)	% of total	Total (ha)	% of total
1	Oromia	9,823,163	34	7,750,422	29
2	SNNP	1,387,759	5	2,434,779	9
3	Gambella	861,126	3	146,603	1
4	Amhara	1,040,064	4	4,352,672	16
5	Tigray	294,455	1	1,841,182	7
6	Banishangal -Gunuz	2,473,064	8	1,422,191	5
7	Afar	163,657	1	3,024,697	11
8	Somali	13,199,662	45	5,384,022	20
9	Others (Harari, Dire Dawa)	0	0	44,132	0
	Total	29,242,949	100	26,400,200	100

Source: WBISPP (2004b)

Table 2 that the three regions with the largest woodland area are Somali (45%), Oromia (34%) and Benishangul-Gumuz (8%) while those with the larger shrub land area are Oromia (29%), Somali (20%) and Amhara (16%). WBISPP (2004b) did an analysis conducted in *words* where there was high forest to arrive at conservative estimates of rates of deforestation caused by increasing population and its need for agricultural land in the three main forested regions. The results show that approximately 1.33 million hectares of natural forest are forecasted to be destroyed between 1990 and 2020; this loss accounts for about one third of the forest resources in the country. Figure 1 presents the projections for each of the three regions and the total. For the three main forested regions, WBISPP (2004b) estimates the destruction of natural forest for agricultural expansion at about 59,000 hectares per annum. On the other hand, EFAP (1994a) and Reusing (1998) put the estimates of deforestation at 150,000-200,000. These estimates imply a wide range of deforestation rates (between 1.5% and 5% per annum) which have different implications.

FIGURE 1. FORECASTED IMPACT OF AGRICULTURAL CLEARING ON THE HIGH FORESTS IN SOUTHEAST, SOUTH AND SOUTHWEST ETHIOPIA.



The figure-1 shows that overgrazing and depletion of soil nutrients estimated at 1.16%, 2.35% and 1.28% for Oromia, SNNP and Gambella regions respectively. The bench magi zone is located in the area of SNNP so the area bench magi zone is caused the deforestation in Ethiopia next to Oromia region and it has to notice that the SNNP region is growing as a coffee zone because of the production of coffee in the region, there are more development activities as well as environmental degradation due to the increasing population and migration of the population for the business purpose. Hence the SNNP region has to notify region in the context of environmental usage and degradation especially the Bench magi zone.

Other uses include incense, myrrh and gums as forest products, grazing for livestock, especially during the dry season, medicinal plants, a sanctuary for wildlife, protection of soil from water and wind erosion, improvement in agricultural productivity through farm forestry, integration of ecosystems and water regimes, and foraging for honey bees. Some important species such as korerima (*Aframomum korarima*) and (wild) coffee are also produced from forests in the area of SNNP at Bench magi zone. The government did not begin afforestation and soil conservation programs until the early 1970s. Agencies responsible for environmental matters include the Ministry of Agriculture, the Forestry and Wildlife Development Authority, and the Ministry of National Water Resources.

Forestry can play a role in reducing land pressure and land degradation, but forestry alone cannot solve the problem. Even if the management of existing forest resources is improved and new trees and forests are established, this may well prove futile if high population growth rates continue to increase the need for crop and grazing land. Using the land for forestry to improve soil fertility or to rehabilitate and conserve the environment will be viewed as secondary to using the land for cropping and grazing to meet immediate survival needs. Attempts to alleviate land degradation are therefore critically dependent on efforts to deal with the three main underlying causes of land degradation, namely population growth, low agricultural productivity, and high dependence on fuel wood, dung, and crop residue as sources of household energy (Teketay, Demel 2001).

LAND GRAB' FEARS IN AFRICA LEGITIMATE

A report by the International Institute for Environment and Development (IIED) (2011) has found that large-scale land deals in Africa are likely to provide scant benefit to some of the world's poorest and most famine-prone nations and will probably create new social and environmental problems. Analyzing 12 recent land leasing, contract investigators found a number of concerns, including contracts that are only a few pages long, exclusion of local people, and in one case actually give land away for free. Many of the contracts last for 100 years, threatening to separate local communities from the land they live on. "Most contracts for large-scale land deals in Africa are negotiated in secret," explains report author Lorenzo Cotula in a press release. "Only rarely do local landholders have a say in those negotiations and few contracts are publicly available after they have been signed."

RELATED ISSUE

In 2013, 35 of Ethiopia's 255 mammal species were threatened. Of 626 bird species, 20 were endangered. One type of reptile in a total of 188 species and 125 plants with a

total of 6,500 were also threatened with extinction. Endangered species in Ethiopia include the simian fox, African wild ass, Tora hartebeest, Swayne's hartebeest, Waliaibex (found only in Ethiopia), waldrapp, green sea turtle, and hawksbill turtle. Hence making the deforestation, causes many environmental problems like reducing rainfall, soil erosion, reducing forest resources and endanger species.

RECOMMENDATIONS ON THE WAY FORWARD

Besides the policy and legal regime, there are further recommendations for make conservation of forest in Ethiopia because the deforestation rate is higher in the country.

- ✓ Need to set up a national forest program
- ✓ Clear property rights needed: there is a need to clarify land use in forest areas and forest property rights
- ✓ There is also a need to identify constraints associated with forest development and conservation such as marketing
- ✓ Need for an updated land use master plan
- ✓ Need to strengthen institutional and human capacity at various levels in the forest sector
- ✓ Proper valuation of forest resources necessary
- ✓ Socioeconomic database on forest resources needed
- ✓ Study the impact of resettlement
- ✓ Integration with other farm activities necessary
- ✓ Political and administrative support needed
- ✓ Revenues collected from forestry activities should go back to forestry development and conservation

CONCLUSIONS

The performance over the last few decades as reflected by the relatively high rates of deforestation and forest degradation indicates the presence of problems in the way forests are managed and used. Virtually all the major forests are owned and managed by the (federal and regional) governments and this is one reason for the poor performance of the forestry sector as there was limited capacity to enforce rules and a *de facto* open access situation is created. This is in turn associated with frequent change in institutional arrangements (separation and re-unification of bodies responsible for forest policy and implementation), poor staffing, limited funding and high staff turnover and encroachment by local communities as there is no incentive for them to utilize forest resources sustainably. There is a need to clearly demarcate and gazette the major forests, and prepare management plans without any delay. Use of a permit system with huge penalties for violators of the rules and regulations is likely to lead to corruption, particularly in countries like Ethiopia and may be ineffective in achieving the objectives of sustainable use of forest resources. For example, the recent forest proclamation includes penalties of up to 15 years of rigorous imprisonment and a fine of up to Birr 30,000. Decentralization of management of forest priority areas to the regional level could be a step in the right direction as it could create an opportunity to manage the resources taking the local conditions into account. It is, however, necessary to carefully consider what level of decentralization is better for each forest when there are potentially conflicting objectives to be achieved, such as environmental sustainability and livelihood of the community (Jagger *et al.*, 2005) and

also depending on the capacity of the institutions that exist (Ribot *et al*., 2006). In the absence of enforcement capacity, it may be preferable to go down to lower levels and make the communities or individuals responsible for management and also the beneficiaries.

The recent federal forest law and policy does indicate the need for providing incentives to encourage tree growing by individuals, associations and organizations which is an important development. But the details have to be worked out through laws, regulations and directives for these to be effective. In the absence of changes in the existing land policy which makes land the property of the government, it is important to effectively ensure that individuals and associations are assured of their rights to trees/forests on their land and that communities participate in decision making in the management of the forests and are also beneficiaries from these resources which are important sources of livelihood. It is important to have clear rules and regulations regarding the legal basis and operation of different forms of organizations involved in forest development, conservation and utilization. There is a need to learn lessons from experiences in Ethiopia so far and from other countries. Forestry research in general and on socioeconomic aspects in particular is very limited (EFAP, 1994b; Demel, 2004). It is therefore necessary to look into the social and economic aspects of existing practices to come up with solutions to problems. It is necessary to conduct policy relevant studies on issues such as behavior of households and communities in relation to forestry. A critical assessment of the socioeconomic aspects of existing experiments in participatory forest management in the most forested regions of the country is one general area of research. In the less forested regions of Amhara and Tigray regions where significant on-farm tree planting and community woodlots/ forests co-exist, it is important to know about household behavior in terms of the interaction between community forests and on-farm tree planting. Insufficient information, knowledge and awareness about the value of forest resources seem to have led to underestimation of these values by different agents. Thus, a study of the role of forests in the livelihoods of the communities and the broader benefits to the country and in the world would also have a useful contribution.

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